

Rhodora

JOURNAL OF THE
NEW ENGLAND BOTANICAL CLUB.

Conducted and published for the Club, by

BENJAMIN LINCOLN ROBINSON Editor-in-chief.

FRANK SHIPLEY COLLINS

MERRITT LYNDON FERNALD } Associate Editors.

HOLLIS WEBSTER

WILLIAM PENN RICH

EDWARD LOTHROP RAND } Publication Committee.

Vol. 8.

October, 1906.

No. 94.

CONTENTS:

Acrochaetium and Chantransia. <i>F. S. Collins</i>	189
Nomenclature of New England Lauraceae. <i>B. L. Robinson</i>	196
Some new or little known Cyperaceae. <i>M. L. Fernald</i>	200
Filipendula rubra, a new Binomial. <i>B. L. Robinson</i>	202

Boston, Mass.

740 Exchange Building.



Providence, R. I.

Preston and Rounds Co.

RHODORA.—A monthly journal of botany, devoted primarily to the flora of New England. Price \$1.00 per year (\$1.25 to all foreign countries except Canada); single copies 15 cents. Volume 1, \$1.50. All remittances by check or draft, except on Boston or New York, must include ten cents additional for cost of collection. Notes and short scientific papers, relating directly or indirectly to the plants of the northeastern states, will be gladly received and published to the extent that the limited space of the journal permits. Forms will be closed five weeks in advance of publication. Authors (of more than one page of print) will receive 25 copies of the issue in which their contributions appear. Extracted reprints, if ordered in advance, will be furnished at cost.

Address manuscripts and proofs to

B. L. ROBINSON, Clement Circle, Cambridge, Mass.

Subscriptions, advertisements, and business communications to

W. P. RICH, 300 Massachusetts Avenue, Boston, Mass.

Single copies may be had from

E. L. RAND, Corresponding Sec'y N. E. Botanical Club,

740 Exchange Building, Boston, Mass.

Entered at Boston, Mass., Post office as Second Class Mail Matter

FIELD-BOOK OF WILD BIRDS AND THEIR MUSIC.

By F. SCHUYLER MATHEWS; an entirely new presentation of the woodland musician with valuable and scientific transcriptions of his songs. Profusely illustrated in color and black and white drawings. G. P. PUTNAM'S SONS, N. Y. \$2.00 by mail, or Address F. S. MATHEWS, 17 Frost Street, Cambridge, Mass.

NOTICE

Part III of **Mosses with Hand-lens and Microscope** now ready. Price \$1.00. Shall we send you a copy?

After Sept. 1, 1906, the price of this work will be advanced to \$1.25 per part to all who subscribe *after that date*.

Mosses with a Hand-lens, second edition, 8vo., 224 pp., 39 full page plates and 151 cuts in the text; describes 169 species of Mosses and 54 species of Hepatics, \$1.75. Sample pages on application.

A. J. GROUT, 360 LENOX ROAD, BROOKLYN, N. Y.

HARDY NATIVE AMERICAN PLANTS

and Carolina Mountain Flowers. Many new rare and local varieties.

Prop. Highlands Nursery,
Kawana, North Carolina.

HARLAN P. KELSEY, Landscape Architect,
Tremont Building, Boston.

Catalogues.

Consultation and plans for improvement of estates, private
and public grounds, suburban properties and resorts.

GROUT

MOSSSES WITH A HAND-LENS. 2d Ed., 224 pp., \$1.75 net, post-paid.

MOSSSES WITH A HAND-LENS AND MICROSCOPE. Part I. 86 pages. \$1.00 net, post-paid. Sample pages on application.

O. T. LOUIS, 59 FIFTH AVENUE, NEW YORK CITY.

Rhodora

JOURNAL OF

THE NEW ENGLAND BOTANICAL CLUB

Vol. 8.

October, 1906.

No. 94

ACROCHAETIUM AND CHANTRANSIA IN NORTH AMERICA.

F. S. COLLINS.

DR. E. BORNET has recently published a short but important paper¹ which will do much to bring order in a group where confusion has long reigned. Twenty-six species are accepted by him in the two genera, and are grouped according to their characters; they are all based on specimens in the Thuret herbarium, and full descriptions are given of only two species; some of the others have brief notes, but the rest have names alone, or names with references to numbers in exsiccatae. The paper is thus of value chiefly in connection with a large herbarium, well supplied with authentic and classical material. While retaining the older names, the species are grouped largely according to characters that had little weight with or were quite disregarded by the authors of the species, so that original references, or the collected descriptions in the Sylloge Algarum of De Toni, are of little use in critical cases. In the following pages an attempt is made to arrange the North American marine species according to the principles of Bornet's paper, and to give descriptions of all, which should enable the student to determine them from the living plant. Only 12 species have yet been recorded in this region, North America including the West India Islands; and this should be borne in mind in using the key; for instance, *Acrochaetium Dictyotae* is the only name given in the key for an asexual plant, with descending endophytic branches, but no trace of the original spore; four other species of this character are known

¹ Deux *Chantransia corymbifera* Thuret. *Acrochaetium* et *Chantransia*; par M. E. Bornet, Bull. Soc. Bot. de France, Vol. LI, p. XIV.

elsewhere, and the student should carefully compare his plant with the description of *A. Dictyota*; if different, it would probably mean that another species should be added to our list.

As generally used, *Chantransia* has included Callithamnion-like marine and fresh water plants with sexual reproduction; and marine and fresh water plants of similar habit with reproduction by monospores only. Some of the fresh water plants of the latter kind have been shown to be but stages of other algae, *Batrachospermum*, *Lemanea*, etc., and it is uncertain whether any of them are really autonomous species; the marine forms, however, can be safely assumed to be such; the only marine plant of the New England coast allied to *Batrachospermum* being *Nemalion multifidum*, whose early stages are well known, and do not include any *Chantransia* form. Only marine forms will be considered here, and they will be divided between the two genera *Chantransia* and *Acrochaetium*, according as they do or do not have a sexual fructification. The diagnoses of the two genera are as follows:

ACROCHAETIUM. Frond filamentous, branching, monosiphonous, the branches often terminating in hairs, which are much finer than the branches, and sharply distinct; fructification asexual, by monospores (occasionally dividing to form tetraspores) lateral and sessile on the branches or terminal on short ramuli; no sexual reproduction.

CHANTRANSIA. Frond as in *Acrochaetium*; sexual reproduction by a carpogonium fertilized by a spermatium, and producing a hemispherical cluster of naked carpospores; monoecious or dioecious; asexual reproduction as in *Acrochaetium*.

The slender filaments are alike in both genera, forming tufts, or continuous fringes or coatings on larger algae, or on *Zostera*, *Ruppia*, etc., never more than a few millimeters high. The only distinction of the two genera is in the organs of fructification, and it is of course possible that sexual fructification may yet be found in some species now included under *Acrochaetium*, in which case they would have to be transferred to *Chantransia*. In all the species now placed in the latter genus, however, the sexual fructification is abundant, the asexual less common; while in all the *Acrochaetium* forms the monospores are practically always found except in very young plants. The older descriptions of species were based chiefly on the size of the cells, the character of the branching, and the position of the spores; all of which have been found to be variable, and different writers have

applied the same name to quite different plants. Bornet's classification is based largely on the characters at the base of the filament; there may be a single cell attached to the host, and bearing a single erect filament; there may be a cellular disk, from which arise several filaments; there may be horizontal branches attached to the host. The spore whose germination gave rise to the plant may persist as a deep-colored, spherical cell, of larger diameter than the filament, or may become indistinguishable at an early stage of growth; the frond may be merely attached to the host, or may penetrate it more or less deeply by descending branches. These characters seem to be quite permanent, and are used in the following keys.

KEY TO THE SPECIES OF ACROCHAETIUM.

1. Unchanged spore persistent at base of filament. *A. Dasyae*.
1. Spore indistinguishable. 2.
2. Descending filaments penetrating the host. *A. Dictyotae*.
2. Not penetrating the host. 3.
3. Base a single cell. *A. Alariae*.
3. Base filamentous. 4.
3. Base a disk. 5.
4. Branches long, virgate, cells 3-6 diam. long. *A. Sagraeanum*.
4. " short, secund; cells $1\frac{1}{2}$ -3 diam. long. *A. flexuosum*.
5. Branching dense, mostly secund; cells $1\frac{1}{2}$ -2 $\frac{1}{2}$ diam. long; basal disk of several layers. *A. secundatum*.
5. Branching more open; cells 2-6 diam. long; disk of a single layer. 6.
6. Spores clustered near the axils. *A. Daviesii*.
6. " seriate along the branches. *A. virgatulum*.

A. Dasyae n. sp. Filis 6-8 μ crassis, parce ramosis, ramis erectis, secundatis, interdum leviter attenuatis; longitudine cellularum 2-5 diam. aequante; pilis non observatis; monosporis $9 \times 16 \mu$, in superiore latere ramorum sessilibus, solitariis aut secundatis singulis in eodem articulo; ad basin fili primarii cellula singula rotundata (spora originali) processum brevem, descendentem, simplicem vel ramosum, paucarum cellularum constitutum, ad plantam hospitem affixum, emittente; an *Callithamnion virgatulum* Harvey, Nereis Bor.-Am., part 2, p. 243? Filaments 6-8 μ diam., cells 2-5 diam. long, rather

sparingly branched, branches erect, secund, sometimes slightly tapering, hairs not observed; spores $9 \times 16 \mu$, sessile on the upper side of the branches, solitary or sometimes in secund series, one on each cell of the branch; at the base of each primary filament a rounded cell, the original spore, emitting a short, descending process, sometimes branched, of a few small rounded cells, attached to the host. On *Dasya elegans* (Mart.) Ag., Wood's Hole, Mass., Sept. 2, 1905.

This is the only species of *Acrochaetium* in which the spore is persistent; the color being the same as that of the host, there is nothing to show the presence of the *Acrochaetium* without microscopic examination. No authentic specimen has been seen of Harvey's plant on *Dasya*, but there is every reason to suppose that if Harvey had seen this species, he would have included it in his *Callithamnion virgatulum*; it is, however, distinct from the *C. virgatulum* of Wyatt, *Algae Danmonienses*, No. 189, which must be considered as authentic.

A. ALARIAE (Jónsson) Bornet, l. c., p. XIX; *Chantransia Alariae* Jónsson, *Botanisk Tidsskrift*, Vol. XXIV, p. 132, fig. 1; *C. secundata* Phyc. Bor.-Am., No. 236. Filament arising from a single cell, naked below, usually densely branched above, branches opposite, alternate or secund; sterile filaments often bearing hairs; filaments about 16μ diam. below, 8μ above, cells 1-3 diam. long below, up to 6 diam. long in sterile branches. In fertile branches uniformly short often clavate, each cell bearing two opposite, sessile spores about $14 \times 20 \mu$, a similar spore terminal on the branch. On *Alaria esculenta*, Maine and N. H.

A. SAGRAEANUM (Mont.) Bornet, l. c., p. XXI; *Cladophora Sagraeana* Montagne, *Sylloge Algarum*, p. 459; *Chantransia virgatula* P. B.-A., No. 39. Basal layer of contorted and entangled filaments, from which arise erect filaments, $6-10 \mu$ diam., cells 4-8 diam. long, branching not very dense, the lowest branches longest, upper gradually shorter, all rather erect, bearing short secund ramuli above the axils; spores borne on the ramuli, about $10 \times 15 \mu$, one or two on each articulation. Conn., W. I., Florida, Southern California.

The ramification is like that of *A. Daviesii*, but the basal layer is quite different.

A. FLEXUOSUM Vickers, *Ann. Sci. Nat., Series 9, Bot., Vol. I*, p. 60. Forming dense globular tufts, with basal entangled horizontal filaments, from which arise erect flexuous filaments, 10μ diam., branching above, branches gradually shorter upwards, in secund series,

erecto-patent, cells 2-3 diam. long; spores secund on the ramuli. On *Chaetomorpha*, N. J., Barbados.

In dimensions, and in arrangement of spores like *A. secundatum*; basal layer different.

A. Dictyotae n. sp. Filis primariis 12-14 μ crassis; ramulis 10-12 μ ; longitudine cellularum inferne $1\frac{1}{2}$ diam. aequante, ad 4 diam. superne; ramulis plerumque secundatis, parum attenuatis, plerumque obtusis; monosporis $14 \times 20 \mu$, in filis sessilibus in loco ramuli, vel 1-3 terminalibus in ramo uni- vel bicellulari; cellulis ad basin frondis rotundatis vel subquadratis, interdum in discum coalitis plures frondes sustinentem; disco fila irregularia emittente, stratum corticalem plantae hospitis penetrantia, inter cellulas magnas internas repentia, interdum usque ad superficiem oppositam attingentia.—Main filaments 12-14 μ diam.; ramuli 10-12 μ ; cells from $1\frac{1}{2}$ diam. below to 4 diam. above; branches mostly secund, not much tapering, usually with rounded tips; spores $20 \times 14 \mu$, sessile on the filament in the place of a branch, or one to three at the end of a one- or two-celled branch. At the base the cells are rounded or squarish, sometimes forming a disk from which arise several fronds; and from which irregular filaments issue, penetrating the cortical layer of the host, and passing between the large internal cells, sometimes extending through to the surface on the other side. On *Dictyota Binghamiana* J. Ag., in tide pools near high water mark, La Jolla, California, Aug. 21, 1899. Mrs. E. Snyder.

No other of our species has so extensive an endophytic portion.

A. VIRGATULUM (Harv.) Bornet, l. c., p. XXII; *Callithamnion virgatulum* Harvey in Hooker, British Flora, Vol. II, p. 549; *Trentepohlia virgatula* Farlow N. E. Marine Algae, p. 109. One to many filaments arising from a basal disk; filaments 10-14 μ diam. below, long and straight, with rather few long straight erect branches, 6-8 μ diam. near the end, usually terminating in a very slender hair; cells about 3 diam. long below, about 6 diam. in the branches; short ramuli, mostly 1-3-celled, abundant, scattered, opposite or in short secund series, bearing either hairs or terminal spores; spores also sessile on the branches, occupying the places of ramuli, $12 \times 20 \mu$. On various algae, Maine to N. J.

The long subsimple branches, with short ramuli or spores on nearly every cell, and the abundant hairs, are the chief characteristics of the species. The branches do not gradually taper into the hairs;

the last cell of the branch is of about the same size as the preceding cells, and the much more slender hair is sharply distinct from it.

Forma **luxurians** (J. Ag.) n. comb.; *Callithamnion luxurians* J. G. Agardh, Species Algarum, Vol. II, p. 14; Harvey, Nereis Bor.-Am., part 2, p. 242; *Trentepohlia virgatula* var. *secundata* Farlow, N. E. Marine Algae, p. 109; *Chantransia virgatula* Farlow, Anderson & Eaton, Alg. Am.-Bor. Exsicc., No. 157. Instead of isolated tufts, this form occurs as an uniform continuous fringe on the edge, rarely on the surface of *Zostera marina* L.; the basal disk practically continuous. Gloucester, Mass., to Bridgeport, Conn.

Forma **tenuissima** (Collins) n. comb.; *Chantransia virgatula* forma *tenuissima* Collins, P. B.-A., No. 741. Filaments arising from a small disk, about 8 μ diam. at base, cells about 3 diam. long; branches sometimes frequent near base, infrequent above, often infrequent throughout; long and virgate, gradually tapering to about 4 μ , with cells 8-10 diam. long, not ending in hairs; spores 8 \times 20 μ , sessile or on a one-celled pedicel, scattered or in short second series. On *Zostera*, San Pedro, California, Nov., 1898.

A. DAVIESII (Dillw.) Nägeli, Morph. & Syst. der Ceramiaceae, p. 412; *Conferva Daviesii* Dillwyn, British Confervae, p. 73; *Callithamnion Daviesii* Harvey, Nereis Bor.-Am., part 2, p. 243; *Trentepohlia Daviesii* Farlow, N. E. Marine Algae, p. 109; *Chantransia Daviesii* P. B.-A., No. 880. Base a small cellular disk, one layer thick, bearing several filaments, about 10-12 μ diam. near base, not much smaller upwards; branches abundant, largely secund, rather erect; cells 2-4 diam. long; spores 10-12 \times 15-20 μ , sessile or on short pedicels in close series on the upper side of the branches at their base; hairs more or less abundant. Forming fringes along the edge of *Rhodymenia palmata* (L.) Grev., and occasionally on other algae.

The arrangement of the spores in this species distinguishes it from all others except *A. Sagraeanum*, which has a different basal portion.

A. SECUNDATUM (Lyngb.) Nägeli, l. c., p. 414; *Callithamnion Daviesii* var. *secundatum* Lyngbye, Hydr. Dan., p. 129; *Chantransia secundata* P. B.-A., No. 1088, not 236. Base a cellular disk, usually two layers thick; filaments several from the same disk, 9-12 μ diam. below, simple for a short distance, then densely branched, branches rather patent, long and short intermixed, at first secund, later often opposite, 6-8 μ diam. near the end, which often bears a hair; cells 1½-2 diam. long in main filaments, 2-3 in the branches; spores 10 \times 18 μ ,

sessile or short pedicelled, secund or sometimes opposite. On various algae, especially on *Porphyra*, Maine to Conn.

In size of filaments and spore characters like *A. virgatula*, but a much shorter and more densely branched plant, with uniformly shorter cells, and branching predominantly secund.

KEY TO THE SPECIES OF CHANTRANSIA.

1. Unchanged spore persistent at base of filament. 2.
1. Spore indistinguishable. *C. efflorescens.*
2. Monoecious. *C. roseolum.* 2
2. Dioecious. 3.
3. Cells 3–10 diam. long; descending endophytic filaments well developed. *C. corymbifera.*
3. Cells 2–3 diam. long; endophytic filaments only slightly developed. *C. Barbadosensis.*

C. CORYMBIFERA Thuret in Le Jolis, Algues Marines de Cherbourg, p. 107; Notes Algologiques, p. 16, Pl. V; P. B.-A., No. 1040, not 192. Filaments erect and straight, about 8 μ diam., slightly tapering above; branches few below, more abundant above, alternate or somewhat secund, virgate, not much branched, cells 3–10 diam. long; spores sessile or short pediceled, near the base of the branch; cystocarps in the form of dense glomerules of naked spores, in the same situation; antheridia on separate plants, in dense, short-pediceled glomerules at various points on the branches.

The original spore, 12–15 μ diam. persistent at the base of the filament, sending down into the host a branching filament, about the size of the erect filament, but more irregular and contorted; erect filaments arising from this endophytic growth, but distinguished from the primary filament by not possessing the spore cell. On *Helminthocladia purpurea*, Southern California.

C. BARBADENSIS Vickers, Ann. Sci. Nat., Series 9, Bot., Vol. I, p. 60. Basal spore persistent; endophytic filament not much developed; erect filaments 12–14 μ diam., cells 2–3 diam. long; fruit as in *C. corymbifera*. Barbados, Guadeloupe.

C. ROSEOLA (Crouan) Bornet, l. c., p. XIX; *Ceramium roseolum* Crouan in Desmazières, Plantes Crypt. de France, No. 1040. Basal spore distinct, emitting descending filaments penetrating the host, and erect filaments with more or less secund branches; cystocarpic

glomerules lateral on the main filaments, spermatangia on special ramuli in the vicinity. On *Myriocladia*, Guadeloupe.

C. EFFLORESCENS var. THURETII Bornet, l. c., p. XVI. *C. corymbifera* P. B.-A., No. 192. Frond arising from a basal disk, filaments 9-10 μ diam. below, slightly less above, branching from the base, branches alternate or secund, often ending in a hair; fertile branches one or more at the axil of a branch, simple or forked, bearing one or two spermatangia at the end; the trichogyne developed on a lower cell, succeeded by a dense glomerule of carpospores. On *Ceramium rubrum* and *Cystoclonium purpurascens*, Marblehead to Gay Head, Massachusetts.

MALDEN, MASSACHUSETTS.

THE NOMENCLATURE OF THE NEW ENGLAND LAURACEAE.

B. L. ROBINSON.

THE application of the rules of nomenclature, which were carefully framed by the International Botanical Congress at Vienna, necessitates many minor changes in current usage. The general tendency of the rules, however, is decidedly conservative and it is believed that all botanists who are seriously anxious for a unified nomenclature will endeavor to apply these rules with care and accept with patience any changes which they impose. It is also to be hoped that such alterations may be made in a manner to be as clear and convincing as possible. For this reason individual cases, involving complicated synonymy, may be appropriately discussed in some detail.

The attractive early-flowering Spice Bush or Benjamin Bush, common from New England southward and westward, has of late been passing in America under two scientific names, viz., *Lindera Benzoin*, the designation adopted in the later editions of Gray's Manual, and *Benzoin Benzoin* (L.) Coulter, the name employed in some more recent works. Neither of these binomials can be maintained under the Vienna rules, and it is therefore worth while to

examine the claims of the various competing names borne by the plant in the past. As to the generic names, they have been as follows:—

Laurus L. Spec. Pl. i. 370 (1753).

Benzoin Fabric. Enum. Meth. Pl. Helmstad. ed. 2, p. 401 (1763).

Lindera Thunb. Diss. Nov. Gen. 44 (1783).

Laurus, subg. *Euosmus* Nutt. Gen. i. 258 (1818).

Evosmus Reichenb. Conspec. 87 (1828).

Benzoin Nees ex Wall. Pl. As. Rar. ii. 63 (1831), and Laurin. Expos. 17 (1833).

Calosmon Presl in Kostel. Allg. med. pharm. Fl. ii. 477 (1833).

Of these generic names the earliest, i. e. *Laurus*, was used by Linnaeus to cover very different elements and is now properly limited in its application to the genuine laurel and closely allied species. The earliest post-Linnaean description of *Benzoin* by Fabricius in 1763 appears to have been generally overlooked until attention was called to it by Kuntze, Rev. Gen. ii. 568 (1891). No mention of this early publication of the genus *Benzoin* occurs in Bentham & Hooker's Genera, in the Index Kewensis, in Pfeiffer's admirable and extraordinarily complete Nomenclator, or in Mez's monographic treatment of the *Lauraceae*. Not having access to the rare second edition of Fabricius's Enumeratio methodica plantarum horti medici Helmstadiensis, the writer applied to Professor William Trelease of the Missouri Botanical Garden for a transcription of the treatment of *Benzoin* in that work. The copy which he very kindly sent runs as follows:—

“**Benzoin* Boerh. Ind. alt. Arbor virginiana, citrei vel limonii folio, Benzoinum fundens Commelin. H. A. I. F. 97. virginiana, pisaminis folio, baccata, Benzoinum redolens Plucknet. Phytogr. T. CXXXIX. f. 3. *Laurus* foliis enerviis, ovatis, utrinque acutis, integris, annuis L. Sp. 9. Flores ante folia, vel statim cumeis prodeunt, ex una gemma plures, ut plurimum 3. vel 4. e viridi lutescentes, pedunculati, 4. plerumque bracteis ovatis, concoloribus, stipati, propter parvitatem difficiliter cognoscendi, certo tamen hermaphroditici, corolla ex 6. vel 8. laciniis vel petalis constante. Numerus filamentorum incertus, 8. vel 9. Antherae aureae splendentes, tuberosae. Germen, stilus & stigma Lauri. Nectarium & glandulae Linnaeanae vix distinguendae.”

From this description it will be seen that the genus *Benzoin* was briefly but adequately described in 1763 and that, both from the characters given and the synonymy cited, there can be no doubt whatever

of the application of the name even at this early date to our common Spice Bush. The later generic name *Lindera* must therefore fall into synonymy along with the discarded names of *Evosmus* and *Calosmon*.

Our plant has also borne several specific names, as shown by the following synonymy.

Laurus aestivalis L. Spec. Pl. i. 370 (1753).

“ *Benzoin* L. Spec. Pl. i. 370 (1753).

“ *fragrans* Salisb. Prod. 344 (1796).

“ *Pseudo-Benzoin* Michx. Fl. Bor.-Am. i. 243 (1803).

Benzoin odoriferum Nees ex Wall. Pl. As. Rar. 63 (1831).

Benzoin Benzoin Coult. Mem. Torr. Bot. Cl. v. 164 (1894).

Of these names *aestivalis* enjoys not only priority of time over all but *Benzoin*, but priority of position over the latter name, since it has precedence on the page of Linnaeus's *Species Plantarum*. It is true that this last matter is of little importance, since the combination *Benzoin Benzoin* is inadmissible according to the Vienna rules, but it may be remarked incidentally that this “duplicate monomial” (to employ an apt expression of the late Mr. Redfield) cannot stand even according to the Rochester Code which by giving weight to priority of position would necessitate the adoption of *Benzoin aestivalis*. This is, therefore, one of the happy cases in which two sets of rules lead through different courses of reasoning to the same result, namely that *BENZOID AESTIVALE* (L.) Nees is the correct name of our Spice Bush.

In employing the two names *Laurus aestivalis* and *L. Benzoin*, Linnaeus of course believed that he was applying them to two different plants, both collected by Clayton in Virginia, but the differences, not very clearly stated in the brief and formal Linnaean descriptions, have not been found reliable or significant in the light of subsequent study. The two species have been reduced to one by the best monographers of the group; and Mr. James Britten, who at the British Museum of Natural History has access to Clayton's original specimen of *B. aestivalis* has been so kind as to verify for the writer its identity with the plant which has long passed as *Lindera Benzoin*.

Unfortunately our other lauraceous species, namely the Sassafras tree must likewise receive an unfamiliar name. The species is best known as *Sassafras officinale* Nees & Eberm., although in recent years some botanists have called it *Sassafras Sassafras* (L.) Karsten.

Neither of these names is applicable under the Vienna rules, the former because *officinale* is not the earliest specific name, the latter because a specific name may not exactly duplicate the generic. The synonymy is as follows:—

Laurus Sassafras L. Spec. Pl. i. 371 (1753).

“ *variifolia* Salisb. Prod. 344 (1796).

Euosmus albida Nutt. Gen. i. 259 (1818).

Tetranthera albida Spreng. Syst. Veg. ii. 267 (1825).

Persea Sassafras Spreng. l. c. 270 (1825).

Sassafras officinale Nees & Eberm. Handb. med.-pharm. Bot. ii. 418 (1831); Nees, Syst. Laurin. 488 (1836).

Sassafras albidum Nees, Syst. Laurin. 490 (1836).

“ *officinatum* J. S. Presl, Rostl. ii. 505 (1846).

Laurus albida Loud. ex Meisn. in DC. Prod. xv. pt. 1, 513, 516 (1864).

Sassafras Sassafras Karst. Pharm.-med. Bot. 505 (1882).

“ *variifolium* Ktze. Rev. Gen. ii. 574 (1891)

From this synonymy it is evident that the earliest available specific name is the one used by Salisbury, which has some thirty-five years priority over the current name *officinale*. The species should, therefore, pass hereafter as *SASSAFRAS VARIIFOLIUM* (Salisb.) Ktze. It is a pleasure to see that this name has already received scholarly recognition by Koehne, who employs it in his admirable *Deutsche Dendrologie* 172 (1893). The descriptive specific name is happily very appropriate.

GRAY HERBARIUM.

SOME NEW OR LITTLE KNOWN CYPERACEAE OF EASTERN NORTH AMERICA.

M. L. FERNALD.

(Continued from page 184.)

CAREX FLAVA and *OEDERI*. The forms of the polymorphous *Carex flava* group seem never to have been clearly differentiated in American literature. The most satisfactory discussion of the group is that of Professor Bailey;¹ but primarily through his attempt to keep apart as distinct varieties American forms which in their details agree with well known European extremes, his treatment is not entirely satisfactory. Although Professor Bailey maintains that the American forms differ from the European, a comparison of many specimens from both continents fails to convince the writer that there are many distinctively American tendencies in the species. That the plant in America and in Europe should present parallel and undistinguishable variations is in no way surprising. Typical *C. flava* is admitted to occur in America as well as in Europe, and several other tendencies of the group seem to occur on both continents. As understood by the writer the plants of eastern America may be treated as follows.

* Beak as long as the body of the perigynium, often becoming bent or retrorse, at least at maturity.

+ Staminate spike sessile or very short-stalked, sometimes pistillate at tip: pistillate spikes mostly contiguous, the lower sometimes remote.

± Fruiting spikes 9 to 12 mm. thick, short-oblong or globose; beaks spreading in all directions: scales dark and usually conspicuous.

= Perigynia ovoid, abruptly beaked.

C. FLAVA L. Sp. i. 975 (1753); Bailey, Mem. Torr. Bot. Club, i. 28 (1889).—Newfoundland and Anticosti to Saskatchewan and Alberta, south to Connecticut, New York, Ohio, Michigan and Montana. Europe.

= Perigynia subulate or conic-subulate, gradually tapering to the beak.

Var. **gaspensis**, n. var. Resembling *C. flava*: the perigynia at first subulate and ascending, later becoming conic-subulate and wide spreading.—A characteristic extreme in the southern part of the Gaspé Peninsula, QUEBEC: cool gravelly banks of Bonaventure River, August 8, 1904 (*Collins, Fernald & Pease*); wet calcareous marl, Goose Lake, New Richmond, July 17, 1905 (*Collins & Fernald*).

¹ Mem. Torr. Bot. Club, i. 28 (1889).

++ ++ Fruiting spikes 6.5 to 8.5 mm. thick, mostly oblong: perigynia spreading and straightish, or the lower strongly retrorse.

Var. *RECTIROSTRA* Gaudin, Fl. Helvet. vi. 97 (1830). *C. flava*, var. *graminis* Bailey, l. c. 30 (1889).—Newfoundland to Michigan and Rhode Island. Europe.

+ + Staminate spike peduncled; pistillate remote, oblong or subglobose, 6.5 to 9 mm. thick: the curved perigynia spreading or usually strongly retrorse.

Var. *ELATIOR* Schlecht. Fl. Berol. i. 477 (1823); Bailey, l. c. 28 (1889). *C. lepidocarpa* Tausch, Flora, xvii. pt. i. 179 (1834). *C. flava*, var. *lepidocarpa* Anderss. Cyp. Scand. 25 (1849), & Olney and others in America.—Quebec to Rhode Island and New York. Europe.

* * Beak distinctly shorter than the body of the perigynium, straight or scarcely bent, ascending or horizontally spreading, hardly retrorse.

+ Staminate spike usually peduncled; pistillate scattered, oblong or globose, 5 to 8 mm. thick.

C. OEDERI Ehrh. Beitr. vi. 83 (1791); Bailey, l. c. 29 (1889).—*C. flava*, β . *Oederi* Schlecht. Fl. Berol. 477 (1823). *C. divisa* Oeder, Fl. Dan. iii. t. 371 (1770), not Huds.—Newfoundland to Hudson Bay and Maine. Introduced on ballast southward. Europe.

+ + Staminate spike usually sessile, often more or less pistillate; pistillate approximate at tip of culm (rarely 1 or 2 remote), globose to oblong.

Var. *pumila* (Cosson & Germain), n. comb. *C. viridula* Michx. Fl. ii. 170 (1803). *C. flava*, var. *pumila* Cosson & Germain, Fl. Par. 602 (1845). *C. Oederi* of most American and many European authors. *C. flava*, subsp. *Oederi*, γ *cyperoides* Marsson, Fl. Neu-Vorpommern, 537 (1869). *C. flava*, var. *viridula* Bailey, Mem. Torr. Bot. Club, i. 31 (1889)—Newfoundland to British Columbia and Vancouver, south to New England, Pennsylvania, Ohio, Indiana, Idaho, and Washington. Europe.

CAREX RETRORSA Schwein. varies greatly, several varieties, of which var. *Hartii* (Dewey) Gray, and var. *Macounii* (Dewey) Fernald, are the best marked, being described. In both these varieties the spikes are scattered and mostly long-peduncled. In typical *C. retrorsa* they are mostly clustered and sessile at the tips of the culms, 1.7 to 2 cm. thick, the perigynia 8 to 10 mm. long. A plant collected by Dr. B. L. Robinson at the Rangeley Lakes differs so markedly in its small perigynia and slender spikes that it may be distinguished as

C. RETRORSA, var. *Robinsonii*, n. var. Spikes mostly crowded and sessile at the top of the culm, slender, 1.2 to 1.5 cm. thick: perigynia 5 to 6 mm. long.—MAINE, gravelly shore, Middle Dam, Rangeley

Lakes, August 2, 1903 (*B. L. Robinson*). Similar specimens have been collected by Mr. F. F. Forbes on the Matane River, Quebec.

CAREX BULLATA Schkuhr, Reidgr. Nachtr. 85, t. U u u, fig. 166 (1806) was described with "spicis . . . femineis binis cylindraceis"; and in the figure two inflorescences are shown with three spikes varying from 2.85 to 3.3 cm. long, and from 1 to 1.2 cm. thick, i. e. definitely cylindric. In recent years, however, the name *C. bullata* has been applied to a plant with the spikes subglobose or thick-cylindric, an extreme of the species generally more common than the plant with narrowly cylindric spikes; while the plant with more slender spikes has been variously treated as a species, *C. Olneyi* Boott, as a hybrid between *C. bullata* and *C. utriculata*, and as an extreme variety of *C. bullata*. Comparison with Schkuhr's original description and figure shows, however, that *C. Olneyi* is the plant which he had in hand, and we must, therefore, treat the two extreme variations as follows.

C. BULLATA Schkuhr. Pistillate spikes 1 or 2, cylindric, 2.5 to 5 cm. long, 1 to 1.5 cm. thick: perigynia dull or slightly lustrous.—Riedgr. Nachtr. 85, t. U u u, fig. 166 (1806). *C. Olneyi* Boott, Ill. i. 15, t. 42 (1858). *C. bullata* \times *utriculata* Bailey, Proc. Am. Acad. xxii. 68 (1887). *C. monile* Britton, Bull. Torr. Bot. Club, xxii. 221 (1895), not Tuck. *C. bullata*, var. *Olneyi* Fernald, RHODORA, iii. 52 (1901).

Var. *Greenii* (Boeckl.), n. comb. Spikes globose to thick-cylindric, 1 to 4 cm. long, 1.5 to 2 cm. thick: perigynia lustrous.—*C. Greenii* Boeckl. Flora, xli. 649 (1858). *C. bullata*, Am. Authors.

GRAY HERBARIUM.

FILIPENDULA RUBRA, A NEW BINOMIAL.

B. L. ROBINSON.

FEW of the native plants of the Middle West exceed in beauty the "Queen of the Prairie," with its pinnate leaves, palmately lobed leaflets, and numerous gracefully paniced flowers, which according to the apt description of Dr. Gray are "deep peach-blossom color." The species has been extensively cultivated both within and east of its natural range, and has now become established as an escape from gardens in some parts of Vermont and Connecticut, perhaps elsewhere

in New England. As it is now a member of the flora of our region and must be included in various local lists, the question of its correct scientific name is likely to arise, and it may be in place to say a few words on this point.

From a general habital resemblance to *Spiraea*, the species and some of its European allies were long referred to that genus. Maximowicz, however, after long and critical study of the group, expressed with great definiteness the view that the genus *Filipendula* bore no close affinity to *Spiraea*, but was rather to be placed near *Geum*, his statement being as follows:

“Genus hucusque inter *Spiraeas* receptum certe ab illis omnibusque *Spiraeaceis* abhorret achaeniis indehiscentibus caducis 1-spermis, stigmatibus amplo et staminibus post anthesin deciduis filamentis sub-anthera subincrassato neque attenuato. Inter *Rosaceas* igitur ponendum, ubi modo crescendi, foliis, stipulis, fragrantia qualitateque rhizomatum, nec non inflorescentia (etsi multo divitiore ramisque adventitiis aucta) cum *Geo* et affinibus ubi in nonnullis etiam iteratim trichotoma flore centrali brevior occurrit, bene convenire videtur.”¹

For the genus, thus separated from *Spiraea*, Maximowicz takes up *Filipendula*, a name dating from the sixteenth century. Maximowicz attributes the name to Linnaeus, however, and cites his *Genera*, ed. 1; p. 145 and *Species Plantarum* ed. 4, p. 172. It is clear that the latter reference is merely a clerical error for Linnaeus's *Genera*, ed. 4, p. 172. Both of these editions of the *Genera* appeared before 1753, the date now generally adopted as the starting point for modern botanical nomenclature, and the plants in question were later referred by Linnaeus in the several editions of his *Species* and *Systema* to *Spiraea*. The first use of *Filipendula* subsequent to 1753 is by Adanson,² whose description, although brief, is accompanied by definite references to the works of Tournefort and Linnaeus in such a manner as to leave no doubt as to its precise application. It is to Adanson, therefore, that the genus as a part of modern nomenclature should be ascribed.

Although Maximowicz selected the earliest generic name, he unfortunately adopted the specific name *lobata* from *Spiraea lobata* Gronov., having apparently overlooked the earlier specific name *rubra*, employed by Hill under *Ulmaria*. The Vienna rules of nomenclature require the union of the oldest specific and generic names, as follows:—

¹ Act. Hort. Petrop. vi. 246 (1879).

² Families des Plantes, ii. 295 (1763).

Filipendula rubra (Hill), n. comb.

Ulmaria rubra Hill, Hort. Kew. ed. 1, 214 (1768).

Spiraea lobata Gronov. ex Jacq. Hort. Vindob. i. 38, t. 88 (1770).

Spiraea palmata L. Syst. ed. 13, p. 393 (1774).

Ulmaria lobata Kostel. Ind. Prag. (1844) ex Maxim. Act. Hort. Petrop. iv. 251 (1879).

Filipendula lobata Maxim. Act. Hort. Petrop. vi. 251 (1879).

The only question which seems likely to arise in regard to this disposition of our species, is whether the old genus *Ulmaria* should be treated as generically separable from *Filipendula*, but for this there seems no rational ground. Historically the two genera rest upon the European *Spiraea Filipendula* and *S. Ulmaria* respectively. These species, familiar in cultivation, exhibit an inflorescence of identical plan and flowers without sufficiently important differences to suggest even subgeneric or sectional distinctions to the more critical writers who have occupied themselves with the group. It is true that the small very numerous leaflets in the type of *Filipendula* and their pinnatifid contour give the plant a rather characteristic appearance markedly different from the type of *Ulmaria*, but when the Asian species with leaflets of intermediate number, size, and form are taken into account, it will be seen that these foliar differences are by no means distinctions of constancy or moment. It is to be noticed, also, that there is a general consensus among scholarly students of the *Rosaceae* that these genera should be united; see for example, Maximowicz, l. c., Focke in Engl. & Prantl, Nat. Pflanzenf. iii. Ab. 3, 40 (1888) & Nactr. 187 (1897), Rehder in Bailey, Cycl. Hort. 1878 (1902), Aschers. & Graebn. Syn. mitteleur. Fl. vi. 436 (1902), etc.

GRAY HERBARIUM.

Vol. 8, no. 93, including pages 169 to 188 was issued 8 October, 1906.

BOTANICAL PUBLICATIONS

SYNOPTICAL FLORA OF NORTH AMERICA, by A. GRAY and others. Vol. I. Fascicles 1 and 2. A critical treatment of forty-five families of polypetalæ (*Ranunculaceæ* to *Polygalaceæ*) 1895-1897. \$5.20.—GRAY HERBARIUM of Harvard University, Cambridge, Mass.

FLORA OF MT. DESERT ISLAND, MAINE, by EDWARD L. RAND and JOHN H. REDFIELD. With a Geological Introduction by WILLIAM MORRIS DAVIS. 1894. And a new map of the Island. 1901. Price \$2.00, post free. A few copies only remain for sale.—Address EDWARD L. RAND, 53 State Street, Boston, Mass.

NEW ENGLAND WILD FLOWERS AND THEIR SEASONS, by WILLIAM WHITMAN BAILEY. Price 75 cents net.—PRESTON & ROUNDS Co., Providence, R. I.

THE FLOWER-LOVER'S MAGAZINE

If you want to know about our wildflowers send for **THE AMERICAN BOTANIST** which is edited especially for the flower-lover. It is not a technical journal but abounds in quaint, curious and otherwise interesting items about the wildflowers. Especially valuable in nature-study work. Send for a sample copy to

WILLARD N. CLUTE & Co., Publishers,
Binghamton, N. Y.

GENERAL ADVERTISEMENTS.

HOME GROWN LILIES.

Fresh from Beds. Wild Flowers, Hardy plants of all kinds.
Send for catalogue.

F. H. HORSFORD, Charlotte, Vt.

CONCORD NURSERIES, Concord, Massachusetts. Established on Minot Pratt's Homestead by his son, F. G. PRATT. Over 300 species grown, including *Rhodora*, pink and white, *Andromedas*, *Cornels*, *Viburnums*, *Kalmias*, *Ivy*, *Myrica*, *Benzoin*, *Hamamelis*. E. Mass. plants collected. Catalogue.

CAMBRIDGE BOTANICAL SUPPLY COMPANY, WAVERLEY, MASS.

SUPPLIES for the Botanist in FIELD, HERBARIUM or LABORATORY. **SAMPLES** of Driers, Mounting Papers, Genus Covers and **NEW LIST** of PLANT MATERIAL for 1906 mailed on request. **PHYSIOLOGICAL APPARATUS** and **HERBARIUM ESSENTIALS**.

Prompt Attention. Standard Material. Immediate Shipments.

A Model Botanical Text-Book

LEAVITT'S OUTLINES OF BOTANY,	\$1.00
With Gray's Field, Forest and Garden Flora,	1.80
With Gray's Manual of Botany,	2.25

For the High School Laboratory and Class Room.

By ROBERT GREENLEAF LEAVITT, A. M., of the Ames Botanical Laboratory. Prepared at the request of the Botanical Department of Harvard University.

THE practical exercises and experiments have been so chosen that they may be performed by schools with even simple apparatus. The instructions for laboratory study are placed in divisions by themselves, preceding the related chapters of descriptive text. The book combines the best features of the newest methods with that lucidity and definiteness which have given Dr. Gray's text-books their extraordinary success. It pays special attention to ecology, but morphology and physiology are also fully treated. The illustrations number 384, and have been drawn with great care and accuracy. The appendix contains valuable suggestions for the teacher, and the index is very complete.

American Book Company

New York

Cincinnati

Chicago

Boston

PSYCHE

A JOURNAL OF ENTOMOLOGY
Established in 1874

Publishes technical papers by recognized authorities, and popular articles characterized by high scientific accuracy, giving particular attention to experimental work. A synopsis of current entomological literature appears in each number. Much space is given to problems connected with the insect fauna of New England.

Six Numbers a year:— February, April, June, August, October, December. Annual subscription One Dollar.

CAMBRIDGE ENTOMOLOGICAL CLUB, 234 Berkeley St., Boston, U. S. A.

THE PLANT WORLD,

An Illustrated Monthly Magazine of Popular Botany.

\$1.00 a year.

Established 1897

12 numbers

Official Organ of the Wild Flower Preservation Society of America. If you are interested in Botany the PLANT WORLD will interest you. If you are a teacher of Botany, the PLANT WORLD will help you by keeping you in touch with modern botanical thought.

Edited by Francis E. Lloyd

Teachers College, Columbia University,

Send two cent stamp for sample copy.

New York City.